

USSR

MINITS, S. M., et al., Biologicheskije Nauki, No 2, 1973, pp 46-49

to electromagnetic fields. It is suggested that redistribution is affected by disruption of vessel-tissue permeability and may be involved in changes of nucleic acid metabolism and redox processes previously noted in response to superhigh-frequency electromagnetic fields.

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UDC 612.015.3.014.426

LAZAROVICH, V. G., Chair of Physics, and Chair of Pathological Physiology,
Ivano-Frankovsk Medical Institute

"Effect of Superhigh-Frequency Electromagnetic Fields on the Content of Iron,
Copper, and Some Metalloproteins in the Blood and Tissues

Moscow, Byulleten' Eksperimental'noy Biologii i Meditsiny, No 10, Oct 70,
pp 44-46

Abstract: Exposure of rats to superhigh-frequency electromagnetic fields (intensity, 160 mw/cm^2 $\eta = 12.6 \text{ cm}$) for 28 days significantly affected the iron, copper, ceruloplasmin, and transferrin content in the blood and tissues. The copper content of the blood was high throughout the experiment, while the iron content of the blood and muscles decreased. Shifts in the copper and iron content of the liver and other organs were also significant, an indication of the redistribution of these elements under the influence of the electromagnetic fields. Ceruloplasmin activity at first decreased, then increased, and toward the end of the experiment decreased once again. Transferrin activity, on the other hand, increased (after a slight initial decrease) and remained high. All of the irradiated animals exhibited a progressive decrease
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LAZAROVICH, V. G., Byulleten' Eksperimental'noy Biologii i Meditsiny, No 10,
Oct 70, pp 44-46

in the number of erythrocytes and a lowered hemoglobin concentration in peripheral blood. These changes evidently play a role in the metabolic and hematopoietic disorders that follow exposure to superhigh-frequency fields.

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UDC: 621.791:549.21:669.24

LAZARSON, E. V. (Engineer), KUZ'MIN, G. S. (Candidate of Technical Sciences)
and PIREGIN, YE. G. (Engineer), Perm' Polytechnic Institute

"Carbon Behavior in Welding Nickel and Nickel-Carbon Alloys"

Moscow, Svarochnoye proizvodstvo, No 1, Jan 72, pp 10-12

Abstract: This study concerns the interaction of carbon of the parent metal with the oxygen of the gas phase in welding nickel and nickel-carbon alloys containing 0.3 to 0.84% C. Included in the study was also the relation of the carbon content in the metal with the latter's tendency to porosity. The specimen plates were welded by the nonconsumable electrode method without alloying additions. The protective atmosphere was a mixture of argon with oxygen. The latter was added to study the burn-out of carbon. In inert-gas shielded welding an increase in carbon concentration in the base metal raises the coefficient of carbon transfer to the weld metal along an exponential curve. In oxygen-shielded welding the minimum coefficient of carbon transfer is observed at a specific ratio of carbon concentration in the base metal to the oxygen content in the gas phase. With an increase of

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LAZARSON, E. V. (Engineer), et al, Svarochnoye proizvodstvo, No 1, Jan 72, pp 10-12

the carbon content in the metal, the process of decarburization takes on a surface nature. Oxygen transport through the gas phase layer adjoining the weld pool surface becomes the limiting component of interaction. An increase of carbon concentration in the weld pool at first raises the porosity and then leads to its reduction. It is suggested that high-carbon metals be used for obtaining nonporous welds. (7 illustrations, 1 table, 7 bibliographic references).

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1/2 028 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--EVALUATING PORE FORMATION TENDENCIES DURING THE WELDING OF NICKEL
-U-
AUTHOR--(02)-KUZMIN, G.S., LAZARSON, E.V.
COUNTRY OF INFO--USSR
SOURCE--SVAR. PROIZVOD. 1970, (2), 36-7
DATE PUBLISHED-----70

SUBJECT AREAS--MECH., IND., CIVIL AND MARINE ENGR
TOPIC TAGS--NICKEL, WELDING, ARGON, HYDROGEN, NITROGEN, GAS CONTAINING
METAL, METAL CONTAINING GAS

CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1996/1990 STEP NO--UR/0135/70/000/002/0036/0037
CIRC ACCESSION NO--AP0118949

UNCLASSIFIED

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UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0118949

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. DURING ELEC. WELDING OF NI UNDER AN AR ATM., N, IF GREATER THAN 0.05PERCENT IN THE AR, CAUSES PORE FORMATION. THE DELETERIOUS EFFECT OF UP TO 0.3-0.4PERCENT N CAN BE COUNTER BALANCED BY 20PERCENT H. INST., PERM, USSR.

FACILITY: PERM. POLITEKH.

UNCLASSIFIED

Automotive and Transportation

USSR

UDC: 534.11:681.31+625.2:62-592.5

LAZARYAN, V. A., BLOKHIN, Ye. P., BELIK, L. V., Dnepropetrovsk

"Longitudinal Oscillations of Nonlinear One-Dimensional Systems with Perturbations Propagating along the Length"

Kiev, Prikladnaya Mekhanika, Vol 9, No 6, Jun 73, pp 89-94.

Abstract: A system of solids connected by deformable elements into a one-dimensional chain is studied. Perturbations propagate at constant velocity along the length of the chain. The dependence between force and deformations of connecting elements is assumed ambiguous; therefore, additional conditions must be set. A numerical solution of the problem is performed as applicable to braking of railroad trains. A computer is used to study the transient process as a function of the initial state of the system, the number of masses, and the clearances in the connecting elements. Comparison with experimental studies shows that the mathematical model reflects the processes occurring under actual conditions with sufficient accuracy.

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Acc. Nr:

A70043586

LAZARYEV B. G.

Ref. Code: UR 0056

PRIMARY SOURCE: Zhurnal Eksperimental'noy i Teoreticheskoy
Fiziki, 1970, Vol 58, Nr 2, pp 434-437

ON THE MINIMUM OF THE ELECTRICAL RESISTANCE OF IRON,
COPPER, LUTETIUM AND THULIUM LAYERS OBTAINED
BY LOW TEMPERATURE CONDENSATION

V. M. Kuzmenko, B. G. Lazaryev, A. I. Sudovtsov, V. I. Melnikov

The temperature dependence of the electrical resistance of Fe, Cu, Lu and Tu layers obtained by deposition of the vapor of the metals on a backing cooled by liquid helium is studied. In all freshly deposited layers a minimum of electrical resistance is observed in the region of 4 to 25° K. The temperature of the minimum is found to depend on the thickness of the metal and on its degree of annealing. As a rule, high temperature annealing results in the disappearance of the resistance minimum in the thicker layers. It is suggested that a new singularity of conductivity electron scattering may exist in strongly distorted metallic lattices.

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UDC 621.396.6.002:621.793(088.8)

KAZAKOVA, S. M., LAZDIN, V. P., BAZHEVA, T. P.

"A Heat Indicator Coating"

USSR Author's Certificate No 254826, Filed 6 Jul 68, Published 18 Mar 70 (from
RZh-Radiotekhnika, No 10, Oct 70, Abstract No 10V295 P)

Translation: This Author's Certificate introduces a heat indicator coating which contains chromium oxide as a pigment, a copolymer of butyl methacrylate and methacrylic acid as binder, and butyl acetate as the solvent. As a distinguishing feature of the patent, a temperature of $95 \pm 2^\circ\text{C}$ is indicated by introducing as a basic temperature indicator 30-35 wt.% pyrogallol, 0.5-0.55 wt.% chromium oxide, 2.5-3 wt.% copolymer of butyl methacrylate with methacrylic acid, and enough butyl acetate to make up a mixture of 100 wt.%.

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1/2 010 UNCLASSIFIED PROCESSING DATE--16OCT70
TITLE--SEPARATION OF MONORIBONUCLEOTIDES ON THE ANION EXCHANGER AV-17 -U-
AUTHOR--(05)-ULASTE, V., LAZDINS, I., BANDERE, R., SMORODINA, I.V., AVOTS,
A.
COUNTRY OF INFO--USSR
SOURCE--PRIKL. BIOKHM. MIKROBIOL. 1970, 6(1), 90-4
DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--YEAST, NUCLEOTIDE, RNA, ION EXCHANGE CHROMATOGRAPHY/(U)AV17
ANION EXCHANGER

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1996/0611 STEP NO--UR/0411/70/006/001/0090/0094
CIRC ACCESSION NO--AP0117839

UNCLASSIFIED

2/2 010

UNCLASSIFIED

PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0117839

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ALK. HYDROLYZATES OF YEAST RNA WERE SEPD. WITH A HCL GRADIENT ON THE ANION EXCHANGER DV-17 IN THE CL PRIME NEGATIVE FORM (CROSS SECTIONAL AREA OF THE COLUMN 0.07 CM PRIME2, HEIGHT 4-6 CM, AMT. OF RNA HYDROLYZATE SEPD. 10-20PERCENT OF THE EXCHANGER CAPACITY, ELUTION VELOCITY IS SIMILIAH TO 3 ML-MIN-CM PRIME2). TO IMPROVE THE SEPN. PROCESS EQUATIONS WERE DERIVED WHICH RELATE THE SEPN. CAPACITY AND QUALITY TO THE ELUTION RATE, GRADIENT CHARACTERISTIC, AND AMT. OF HYDROLYZATE INTRODUCED. FACILITY: INST. ORG. SYN., RIGA, USSR.

UNCLASSIFIED

USSR

UDC: 51

ZLOTNIK, S. G., LAZEENIK, A. I., SPIRIDONOVA, G. V.

"Use of Linear Programming With Variable Coefficients for Optimizing the State of a Power Supply System With Regard to Restrictions on Reverse Currents"

Materialy Seminara po kibernet. AN MoldSSR, Mold. territor. gruppy Nats. kom. SSSR po avtomat. upr. (Materials of the Moldavian Territorial Group of the National Commission of the USSR on Automatic Control), 1971, vyp. 35, pp 3-10 (from RZh-Kibernetika, No 4, Apr 72, Abstract No 4v460)

Translation: An algorithm is considered for optimizing the load distribution in a thermal power supply system which accounts fairly accurately for losses in the network and restrictions on reverse flows. The algorithm is based on using linear programming with variable coefficients. Authors' abstract.

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USSR

UDC 681.2-52

LAZEBNIK, R. M., CHUPAKHIN, A. YA., All-Union Scientific Research Planning, Design and Technological Institute for Explosion Protection and Mining Electrical Equipment (VNIIVE)

"ATZ-1 Temperature Protection Device"

Moscow, Kholodil'naya tekhnika, No. 9, Sep 71, pp 18-21.

Abstract: A multipoint device for temperature protection in mining, the ATZ-1, was developed by VNIIVE. Semiconductor thermistors of the type ST1-19 were used as the sensing elements; the basic advantage of these elements is the large negative temperature coefficient of the resistance and the relatively high ohmic ratings which make the device practically independent of the length of the cable connecting the heat transducer with the supply unit and the auxiliary circuit. The circuit of the ATZ-1 uses the principle of a pulsed supply of a bridge measuring circuit so that the signal strength obtained from the output of the bridge rises considerably. The parameters for the pulse supply of the bridge circuit are: pulse length 20 μ sec, pause time 40,000 μ sec, voltage amplitude 180 v, off-duty factor 2001. The pulse supply for the bridge circuit made it possible to produce a highly sensitive temperature protection

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LAZEBNIK, R. M., CHUPAKHIN, A. YA., Kholodil'naya tekhnika, No. 9, Sep 71, pp 18-21

device and the parameters were chosen on the basis of the following considerations: the pause length should not exceed the value at which it is possible to achieve an emergency value of the temperature of the controlled object and subsequent lowering of it to normal, while the length should be sufficient for discharge to the cable to the heat transducer; the pulse length should ensure operation of the auxiliary device at the output of the bridge circuit and the pulse energy as determined by its form and area should not exceed the minimum value of the energy at which an explosive gas-air mixture is reached. The device provides temperature protection and control in the range 60-200°C at five points.

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USSR

UDC: 621.317.337

LAZENBNYY, B. V. and SHUL'GA, V. P.

"Dynamic Method for Measuring Resonator Characteristics"

Kiev, Izvestiya VUZ--Radioelektronika, Vol. 14, No. 1, 1971,
pp 99-102

Abstract: The dynamic method, based on the use of oscillators with frequency modulation, is becoming more widely used in preference to statistical methods for measuring UHF resonator characteristics because it involves fewer difficulties. However, since this method too is complex and has the drawback of requiring several pieces of equipment, the authors propose a device for making these measurements using standard instruments. It comprises a klystron oscillator which is both frequency and amplitude modulated by a square-pulse oscillator, the resulting signal going to the resonator under measurement through a measuring line. A second output of the line goes to an oscillograph whose sweep circuit is controlled by the same square-pulse oscillator noted above. The authors used this method for determining the characteristics of high-Q resonators in the three-centimeter wavelength range with standard components. They assert that the method is also convenient for finding the maximum Q in the selection of resonators.

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USSR

UDC 681.332.65

LAZER, I. M.

"Clock Pulse Generator"

USSR Author's Certificate No 290430, Cl. H 03 k 3/64, filed 5 Jan 70, published 20 Jul 71 (from RZn-Avtomatika, Telemekhanika i Vychislitel'naya Tekhnika, No 5, May 72, Abstract No 5B209P)

Translation: One of the devices used most often in computer and digital control equipment is a clock pulse generator (CPG). The CPG, as a rule, includes a continuously running quartz master clock, a clamping (synchronizing) circuit, and a clock pulse shaper. The CPG puts out a train of clock pulses (CPs) only at those moments of time when it receives an enabling signal, the so-called CPG trigger signal. This signal is nonsynchronous with respect to the pulses produced by the master clock. Synchronizing of the CPs to the trigger signal is done by the synchronizing circuit. It assures the appearance of clock pulses at the CPG output in the minimum possible time after receipt of the trigger signal. In one well-known CPG the synchronizing device uses two complementing flip-flops and a half-adder; i.e., it is characterized by fairly complex construction. There is also a simpler CPG, in which the synchronizing circuit uses to separate-starting flip-flops and a half-adder, based on logic 1/2

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LAZER, I. M., USSR Author's Certificate No 290430

AND-NOT or OR-NOT elements. However, in view of the use of CPGs in large quantities, the question of cutting down on the number of input elements and reducing size and weight is very important and urgent. The purpose of the invention is to simplify CPGs, particularly synchronizers. The essence of the proposal is that the necessary switching function of the synchronizer is based on one separate-starting flip-flop which is set or reset on receipt of a trigger signal, and in the absence of this signal the flip-flop is in the state where logical "ones" are formed at its two outputs.

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USSR

UDC: 681.332.65

LAZER, I. M., OVSISHCHER, P. I., YAMPOL'SKIY, A. B., SHUEAREV, V. A.

"A Reversible Counter With Group Carry"

USSR Author's Certificate No 287121, filed 4 Jul 69, published 21 Jan 71
(from RZh-Avtomatika, Telemekhanika i Vychislitel'naya Tekhnika, No 10, Oct
71, Abstract No 10B236 P)

Translation: A reversible counter with group carry is known which is based on potential OR-NOT (AND-NOT) elements, in which each digital place is built on nine elements, six of which form the counter digit proper, which is comprised of three flip-flops with set inputs, one being a memory flip-flop and two being commutation flip-flops, while three elements per digital place are necessary for constructing the carry circuit. This type of set-up has the following disadvantages: The operating reliability of the counter is poor, since the count digit of the flip-flop has no memory of the preceding state when the next count pulse arrives, and logical shifts occur in the carry circuit. The speed of the counter is reduced because of the presence of two series diodes in the ripple-through carry circuits.

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USSR

LAZER, I. M. et al., Soviet Patent No 287121

The purpose of the proposed invention is to provide a reversible counter circuit on potential logic elements (AND-NOT, OR-NOT) which is free of the disadvantages mentioned above while reducing the expenditure of equipment per digital place in the counter. This purpose is achieved by introducing two diodes into each count digit with the appropriate connections to implement the functions of reversal and storage of the preceding state. The group carry function is performed by logic elements of the count circuit by means of the added diodes. Two illustrations.

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USSR

UDC: 621.374.33(088.9)

LAZER, I. M., GLINTERNIK, V. R.

"A Pulse Signal Decoder"

USSR Author's Certificate No 259958, filed 12 Dec 68, published 4 May 70
(from RZh-Radiotekhnika, No 12, Dec 70, Abstract No 180266 P)

Translation: This Author's Certificate introduces a pulse signal decoder which contains a time selection circuit and a shift register. This shift register in turn contains main and auxiliary flip-flops and "zero" and "one" diodes. To improve accuracy in time selection of pulses and to increase the speed of the device, the shift register contains an additional diode with one input connected to the information input of the decoder, the second input connected to the inverse cadence pulse line, and the output connected to the set terminals of the main and auxiliary flip-flops of the first digital place of the shift register, and also to the input of the "zero" diode of the auxiliary flip-flop for the first digital place. The output of the "one" diode for the main flip-flop of the first digital place is connected in addition to the set terminal of the auxiliary flip-flop of the first digital place in the register.

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USSR

UDC 621.374.32

SHUBAREV, V. A., OVSISHCHER, P. I., LAZER, I. M.

"A Reversible Shift Register"

Moscow, Otkrytiya, izobreteniya, promyshlennyye obraztzy, tovarnyye znaki, 1970, No 33, Soviet Patent No 285064, class 21, filed 4 Jul 69, published 29 Oct 70, pp 42-43

Translation: This Author's Certificate introduces a reversible shift register with data transmission in direct code. A digital place contains two commutation flip-flops and a storage flip-flop which are based on potential AND-NOT (NOR) logic elements. As a distinguishing feature of the patent, the circuit is simplified and speed is increased by adding an auxiliary AND-NOT (NOR) logic element in each digital place. This additional logic element is coupled by a flip-flop to the zero branch of the storage flip-flop. The second input of the auxiliary element is connected to the set terminal of the storage flip-flop, and the third input is connected to the "left shift" line. The output of the auxiliary element is connected by interdigit coupling to the input of the first commutation flip-flop of the preceding digital place, and the one-output terminal of the storage flip-flop is connected by interdigit coupling to the input of the first

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USSR

SHUBAREV, V. A., et al., Otkrytiya, izobreteniya, priyashleennyye obraztsy, tovarnyye znaki, 1970, No 33, Soviet Patent No 285064, class 21, filed 4 Jul 69, published 29 Oct 70, pp 42-43

commutation flip-flop of the next digital place. The auxiliary input of the ones arm of the storage flip-flop is connected to the "right shift" line.

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USSR

UDC 621.374.32

LAZER, I. M., OVSISHCHER, P. I., YAMOPOL'SKIY, A. B., SHUBAREV, V. A.

"A Reversible Counter With Group Carry"

Moscow, Otkrytiya, izobreteniya, promyshlennyye obratuy, tovarnyye znaki, 1970, No 35, Soviet Patent No 287121, class 21, filed 14 Aug 68, published 19 Nov 70, p 64

Translation: This Author's Certificate introduces a reversible counter with group carry based on potential AND-NOT (OR-NOT) logic elements. A digital position in the device contains a counting circuit based on three flip-flops which are separately triggered. One of them is a storage flip-flop and the other two are commutation flip-flops. As a distinguishing feature of the patent, the circuit is simplified, speed is increased and reliability is improved by adding two diodes to each digital position of the counter. The first input of the first diode is connected to the ones state of the first commutation flip-flop, and the analogous input of the second diode is connected to the zeros state of the same flip-flop. The second input of the first diode is connected to the zeros state of the second commutation flip-flop, and the analogous input of the second diode is connected to the ones state of this same flip-flop. The third inputs

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USSR

LAZER, I. M., et al., Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, 1970, No 35, Soviet Patent No 287121, class 21, filed 14 Aug 68, published 19 Nov 70, p 64

of the diodes are connected to the "add" and "subtract" inputs respectively. The diode outputs are connected to the set terminals of the commutation flip-flops for all following digital positions.

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USSR

UDC 621.4/.6:533.6

LAZEREV, Ye. A., BAUL'KIN, A. V., LAVRIK, A. N., RASKIN, V. G.

"Determination of the Permissible Range of Variation in the Control Parameter of a Two-Stage Turbine in a Turbocompressor"

Sb. nauch. tr. Chelyabinsk. politekhn. in-ta (Collected Scientific Works of the Chelyabinsk Polytechnical Institute), 1971, No 87, pp 96-102 (from RZh-Mekhanika, No 10, Oct 71, Abstract No 10B334)

Translation: The paper presents the results of a theoretical study of nozzle control implemented on both stages of a turbine. The ratio of the areas at the outlets from the guide vane assemblies is used as the control parameter. Calculations show that as the degree of expansion of the gas in a stage increases, the optimum values of the control parameter decrease. For instance when the degree of expansion is $\pi_r^* = 0.6$, the optimum value of the control parameter is 1.1, while at $\pi_r^* = 1.0$, the optimum control parameter decreases to 0.8. The permissible ranges of variation in the control parameter ΔI are determined from the condition of a reduction in efficiency by no more than 0.5%: at a degree of expansion of $\pi_r^* = 1.0$, this range is 0.7-0.9, and at $\pi_r^* = 0.6$, it is 0.98-1.28. A. G. Plotkina.

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USSR

UDC 542.91:661.713.1

MASTRYUKOVA, T. A., LAZAREVA, M. V., and PEREKALIN, V. V., Institute of Organoelemental Compounds, Academy of Sciences USSR, and Leningrad State Pedagogical Institute imeni A. I. Gertsen

"New Synthesis of γ -Aminopropylphosphonic Acid"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, No 6, Jun 71, pp 1353-1354

Abstract: The authors report the synthesis of γ -aminopropylphosphonic acid by hydrolysis of O,O-diethyl- γ -aminopropyl phosphonate, obtained by condensation of O,O-diethylvinyl phosphonate with nitromethane in the presence of sodium ethylate with subsequent reduction.

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USSR

UDC: 621.372.8.092.22

BELYACHENKO, V. P., GORSKAYA, R. S., LAZERSON, A. G., RYKHENKO, B. F.,
CHARUSHKIN, B. D.

"Approximate Calculation of the Characteristics of Film-Type Decelerating
Systems on a Dielectric Substrate"

Elektron. tekhnika. Nauchno-tekhn. sb. Elektron. SVCh (Electronic Technology,
Scientific and Technical Collection, SHF Electronics), 1971, vyp. 1, pp
134-137 (from RZh-Radiotekhnika, No 5, May 61, Abstract No 5B103)

Translation: The proposed method, which can be used to calculate the dis-
persion characteristics of film-type rod decelerating systems on a dielec-
tric substrate, utilizes the well known results of investigation of film-type
rod systems without a dielectric. The method of perturbation and the method
of equivalent substitution are used to derive computational formulas. Two
illustrations, bibliography of five titles. Resumé.

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USSR

UDC 621.385.032

ZOLOTAREV, YE. L., LAZERSON, A. G., RYZHENKO, B. F.

"Theoretical Investigation Of Deceleration Systems Of The 'Plates With Rings' Type"

Elektron. tekhnika. Nauchno-tekhn. sb. Elektron. SVCh (Electronic Technology. Scientific-Technical Collection. Microwave Electronics), 1970, No 8, 17-28 (From RZh--Elektronika i yeye prizeneniye, No 12, December 1970, Abstract No 12A35)

Translation: A deceleration system (DS) is considered, which consists of a periodic succession of flat rings connected by several plates. The symmetry properties of the DS in question are investigated and the number of wave modes which can be propagated in similar DS is determined. The components of the electromagnetic field and the approximate dispersion equation of various wave modes in a "plates with rings" DS are found with the aid of the method of partial domains, the Fourier method, and one of the projection methods. The formula obtained is for computation of the coupling impedance of the spatial harmonics of the wave. 5 ref. Summary.

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USSR

UDC: 628.9.038

DOLGANOV, V. V., LAZEYEV, M. V.

"A Multiple-Electrode Electroluminescent Display Panel"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Ohranitsy, Tovarnyye Znaki, No 13, May 72, Author's Certificate No 335794, Division II, filed 3 Aug 70, published 11 Apr 72, p 233

Translation: This Author's Certificate introduces: 1. A multiple-electrode electroluminescent display panel which contains a glass substrate, transparent electrode with the necessary image shape, layers of electroluminescent composition and dielectric applied to the substrate, a common electrode, and the same number of leads as electrodes. As a distinguishing feature of the patent, in order to ensure reliable electrical connection between the leads and the electrodes, to increase the mechanical strength of the lead fastening, and to improve technological properties, the ends of the leads for the transparent electrodes are welded to the base of the glass substrate and are flush with its surface at points of application of the nonworking section of the corresponding electrode, forming an internal contact with the electrode. 2. A modification of this display panel dis-

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DOLGANOV, V. V., LAZEYEV, M. V., USSR Author's Certificate No 335794

tinguished by the fact that the nonworking section of the common electrode, as it bends around the layers of electroluminescent composition and dielectric applied over the transparent electrodes, comes out on the surface of the section of substrate into which the end of the lead of the common electrode is welded.



USSR

UDC 539.3

LAZHECHNIKOVA, Ye. K.

"Refinement of a Model of a Finite Element by Accounting for Shift Rigidity"

V sb. EVM v issled. i proyektirovani ob'yektov str-va (Computers in the Study and Design of Structural Objects -- Collection of Works), Kiev, "Budivelnik", 1972, pp 118-130 (from RZh-Mekhanika, No 3, Mar 73, Abstract No 3V178)

Translation: A computational model of a finite element used in the design of a panel building is described. Since the length and width of the model are quantities of the same order of magnitude, transverse forces are taken into account in calculating the Mohr integral and constructing the rigidity matrix. Some results of computational studies are presented. 5 ref. Author's abstract.

Conferences

USSR

LAZINTSEV, D. N., and ANOKHINA, G. S.

"IV Plenum of VKHO [All-Union Chemical Association] imeni D. I. Mendeleev"

Moscow, Zhurnal Vsesoyuznogo Khimicheskogo Obshchestva imeni D. I. Mendeleev, Vol 15, No 3, 1970, pp 337-342

Abstract: The IV Plenum of the All-Union Chemical Association (AUCA) was held on the 29 Jun 70 in Moscow. The agenda covered the subjects of "Direction of the scientific-technical development of chemical, petrochemical, and structural materials industries in 1971-1975", "Fulfillment of the commitments made by AUCA in honor of the 100 Anniversary of the birth of V. I. Lenin", and the approval of the workplan and budget for 1970. The president, S. I. VOL'FKOVICH opened the session, noting the progress of the past years. Assistant Minister for Chemical Industry in the USSR, G. V. IVAROV, talked about the future 5 year plan and the directions for scientific and technical progress, stressing the improvements and intensification of technological processes. He discussed the aspects of agricultural chemistry and production of inorganic chemicals, stressed the importance of polymers, and concluded with

USSR

LAZINTSEV, D. N., and ANOKHINA, G. S., Zhurnal Vsesoyuznogo Khimicheskogo Obshchestva imeni D. I. Mendeleeva, Vol 15, No 3, 1970, pp 337-342

a short discussion of low tonnage production -- new reagents, their purity, analytical methods surface active agents, etc.

A. P. SAVEL'YEV discussed the directions for scientific-technical progress in petroleum processing and the petrochemical industry. The USSR is second worldwide as far as the processing of petroleum is concerned and its rate of development is greater than that of the USA. New plants have been constructed and many new processes developed. Considerable success has been achieved in synthetic rubber; the tire industry, however, needs basic modifications.

Construction materials were covered by the director of technical administration of the Ministry of Industrial Structural Materials USSR, V. I. DOBUZHINSKIY. Presently about 800 types of construction materials are being produced. He discussed the cement, glass, wall materials and ceramics industry, not the current trends in them.

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USSR

LAZINTSEV, D. N., and ANOKHINA, G. S., Zhurnal Vsesoyuznogo Khimicheskogo Obshchestva imeni D. I. Mendeleeva, Vol. 15, No. 3, 1970, pp 337-342

S. I. VOL'FKOVICH and D. P. NOVIKOV pointed out the need for correct labor organization in the plants. B. I. STEPANOV noted that preparation of engineers lags behind the needs foreseen for the near future. G. M. STRONGIN, S. V. ZUEAREV, A. F. LOZIKIN and YU. M. BUTT discussed improvement in economic effectiveness as related to scientific organizations, transportation, rapid application of new inventions, etc.

In regard to the second portion -- the fulfillment of commitments -- the representatives of the Moscow, Ukrainian, Georgian, Ryazan', Kalinin, Bashkir, and Altai AUCA noted that progress is satisfactory; the technology of direct production of phosphoric acid was developed on schedule, new compositions were developed for various lubricants, and individual goals set by various groups were achieved. Nevertheless it was noted that in some cases serious deficiencies exist. V. P. KOMAROV talked about future plans and the budget. The budget for 1970 was set at 882.1 thousands rubles. D. N. LAZINTSEV was elected as the president of the Central Bureau of AUCA.

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USSR

UDC 621.372.855.1:538.573

LAZUYEV, E.M., OKSYZYAN, G.G., SEROV, V.L.

"Parametrical Radiation Of Relativistic Electron Bunches In A Waveguide Filled With Schistose Dielectric"

Radiotekhnika i elektronika, Vol XVII, No 6, June 1972, pp 1335-1336

Abstract: Experimental data are presented concerning excitation of an E_{01} wave in a circular waveguide, based on the fundamental harmonic of the frequency of beam grouping of a linear accelerator $f = 2797.2$ MHz. The energy of the accelerated electrons was equal to 50 Mev. With the aid of a magnetic analyser and a collimator of $\phi 5$ mm an electron beam was cut out with the width of the spectrum $\Delta E/E_0 = + 0.2$ percent which corresponded to $\sim 3-5^\circ$ of the phase length of the bunch. The number of electrons in the bunch amounted to $\sim 2 \cdot 10^5$ particles and the angular divergence to $\sim 3 \cdot 10^{-2}$ rad. The beam of electrons passed through a circular waveguide 9.6 cm in diameter filled with alternating layers of air and Teflon ($\epsilon = 2.05$). The Teflon disks had a central aperture $\phi 12$ mm for passage of the beam. The power of the excited E_{01} wave was measured before and after. The results of the experiments are presented in figures. The authors thank K.A. Barsukov, B.M. Bolotovskiy, and E.D. Gazazyan for discussions. 2 fig. 4 ref. Received by editors, 13 September 1971.

1/1

USSR

UDC 621.372.827

BARSUKOV, K.A., GAZAZYAN, E.D., LAZTYEV, S.M.

"On The Theory Of Transition Radiation In A Waveguide"

Izv. VUZ: Radiofizika, Vol XV, No 2, Feb 1972, pp 191-195

Abstract: The transition radiation of a particle crossing a regular waveguide perpendicular to its axis is considered. The waveguide is filled by a dielectric with a constant ϵ . Expressions are derived for the fields and radiation intensity. With $\epsilon = 1$, it is possible that Vavilov-Cerenkov radiation can also originate together with transition radiation. The properties of this radiation are considered for the comparatively simple case of a rectangular waveguide. The conditions are obtained which determine the spectrum of the Vavilov-Cerenkov radiation, and the threshold values of the velocity and the dielectric constant for this radiation are established. 9 ref. Received by editors, 4 June 1971.

1/1

USSR

UDC 621.372.827

BARSUKOV, K. A., GAZAZYAN, E. D., LAZIYEV, E. M.

"Theory of Transition Radiation in a Wave Guide"

Gor'kiy, Izvestiya vysshikh uchebnykh zavedeniy, Radiofizika, Vol XV, No 2, 1972, pp 191-195

Abstract: Transition radiation in wave guides has been studied in a number of papers [K. A. Barsukov, ZhETF, No 37, 1106, 1959; ZhTF, No 32, 161, 1962] in which a study was made of the characteristic features of this radiation on movement of a charge parallel to the wave guide axis. The experimental difficulties encountered in that research in connection with the narrow band nature of the wave transformers and separation of the beam and radiation can be excluded by moving the beam in the transverse direction to the wave guide axis. A theory of this phenomenon is proposed here for a regular wave guide filled with dielectric with a dielectric constant ϵ . Expressions are obtained for the radiation fields and intensity. A study was made of the properties of the radiation in the example of a rectangular wave guide, and the conditions determining the Vavilov-Cerenkov radiation spectrum were obtained. Expressions are derived for the Cerenkov radiation energy.

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USSR

UDC 548.0:535

VLOKH, O. G., KUTNYI, I. V., LAZ'KO, I. A., and NESTERENKO, V. YA., L'vov State University imeni Iv. Franko

"Electrogyration of Crystals and Phase Transitions"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Fizicheskaya, Vol. 35, No 9, Sep 71, pp 1852-1855

Abstract: Among the effects which are spontaneously generated during ferroelectric phase transitions the best known are the linear and quadratic electro-optical effects which are manifested in the change in refracting properties of the crystals and are described by polar tensors of the third and fourth ranks. Proceeding from the common symmetry arguments based on the principles of Curie and Neumann it may be expected that the ferroelectric phase transitions will be accompanied also by change in the gyration properties of the crystals that are associated with the imaginary part of the complex refractive index. The authors studied the spontaneous electrogyration effect in crystals of triglycinesulfate (TGS). They determined the size of the coefficient of linear electrogyration of the TGS crystals. They analyzed the character of the spontaneous electrogyration as a function of the type of phase transition and indicated the excellent characteristics of this effect as compared to the spontaneous electro-optical effect. The article contains 1 illustration and 11 bibliographic entries.

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USSR

UDC 669.017.1

OVSYANNIKOV, B. K., and LAZ'KO, V. G.

"Influence of Stress Concentration on Strength of Low-Alloy and Structural Steels During Static Extension as a Function of Test Temperature"

Spetsial'nyye Stali i Splavy [Special Steels and Alloys--Collection of Works], No 77, Metallurgiya Press, 1970, pp 222-229

Translation: The dual nature of the influence of stress concentration on strength and ductility of steels as a function of geometric parameters of the notch and test temperature is demonstrated. In a significant number of cases, stress concentration, down to rather low temperatures, helps to increase the strength of a notched specimen. Only under conditions of sharp stress concentration or at very low temperatures is a softening effect noted.

It is demonstrated that a significant decrease in strength at temperatures corresponding to the actual operating temperatures of low-alloy and structural steels is observed only when specimens with a preliminarily induced crack are tested. Therefore, in order to estimate the strength of these materials, particular attention must be given to testing of specimens with sharp crack-type stress concentrators. 7 figures; 4 biblio. refs.

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USSR

UDC 539.5

LAZ'KO, V. G., LAZ'KO, V. Ye., OVSYANNIKOV, B. M., Moscow

"Interrelationship of Microstructure and Rupture Characteristics of High Strength Steels"

Problemy Prochnosti, No 10, 1971, pp 86-90.

Abstract: Some dependences of rupture characteristics of steel on elements of the martensitic structure typical for a number of classes of high strength steel are studied on the example of Type 40Kh2GSMA high strength steels subjected to hardening and tempering at low temperature (220°). The data produced showed that an increase in the dispersion of the structure causes not only an increase in strength characteristics, but also an increase in rupture characteristics of the steel. The grain size of the steel was altered both by hardening from various temperatures and by modeling of welding heating cycles. The results indicate a simultaneous decrease in the work of formation and the work of development of cracks with increasing grain size.

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USSR

UDC 539.5

LAZ'KO, V. G., LAZ'KO, V. Ye., OVSYANNIKOV, B. M., Moscow

"Interrelationship of Microstructure and Rupture Characteristics of High Strength Steels"

Problemy Prochnosti, No 10, 1971, pp 86-90.

Abstract: Some dependences of rupture characteristics of steel on elements of the martensitic structure typical for a number of classes of high strength steel are studied on the example of Type 40Kh2GSNMA high strength steels subjected to hardening and tempering at low temperature (220°). The data produced showed that an increase in the dispersion of the structure causes not only an increase in strength characteristics, but also an increase in rupture characteristics of the steel. The grain size of the steel was altered both by hardening from various temperatures and by modeling of welding heating cycles. The results indicate a simultaneous decrease in the work of formation and the work of development of cracks with increasing grain size.

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1/2 023 UNCLASSIFIED PROCESSING DATE--11DEC70
TITLE--EFFECT OF THE COMPOSITION OF THE BASE METAL ON THE BRITTLE FRACTURE
TENDENCY OF HIGH STRENGTH STEEL JOINTS -U-
AUTHOR--LAZKO, V.YE.

COUNTRY OF INFO--USSR

SOURCE--AVIACHAT. SVARKA 1970, 23(4), 15-19 (RUSS)

DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS, MECH., IND., CIVIL AND MARINE ENGR

TOPIC TAGS--HIGH STRENGTH STEEL, MECHANICAL PROPERTY, NICKEL ALLOY,
MANGANESE ALLOY, WELD JOINT/(U)42KHG2N3MA HIGH STRENGTH STEEL,
(U)42KHG2N3MA HIGH STRENGTH STEEL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3006/0328

STEP NO--08/0125770/023/014/001970019

CIRC ACCESSION NO--AP014432

UNCLASSIFIED

2/2 023

UNCLASSIFIED

PROCESSING DATE--11DEC70

CIRC ACCESSION NO--AP0134102

ABSTRACT/EXTRACT--(U) GP-O- ABSTRACT. THE EFFECTS ON STRUCTURE AND MECH. PROPERTIES OF WELD SEAMS OF HIGH STRENGTH STEELS ADDED, ALLOYED WITH VARIOUS ELEMENTS WERE STUDIED. THE TECH. PROPERTIES, ESPEC. RESISTANCE TO BRITTLE FRACTURE, OF 42KHGSNMA ARE IMPROVED BY ADDING ALLOYING WITH IN AND NI TO GIVE THE SAME COMPN. AS 42KHGSNMA.

UNCLASSIFIED

USSR

TSYPUGINA, V. G., TISKI, N. S., and LAZORENKO, G. YH.

"Artificial and Natural Radionuclides in the Life of Hydrobionts"

Iskusstvennyye i yestestvennyyye radionuklidy v zhizni gidrobiontov (cf. English above), Kiev, "Nauk. dumka," 1973, 152 pp ill., 96 k. (from RZh-Biologicheskaya Khimiya, No 15, Aug 73, Abstract No 15P1372 K)

Translation: Results are presented from studies on the cytology and radiation cytogenetics of salt-water fish, the accumulation and distribution of uranium in marine organisms, and on the mechanism responsible for the storage of radionuclides by water plants.

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CSO: 1841-W

- 75 -

1/2 011 UNCLASSIFIED
TITLE--PREPARATION OF COLLOIDAL SULFUR -U-

PROCESSING DATE--13NOV70

AUTHOR--(04)--LAZORIN, S.N., SUKHOMLINOV, B.P., SHIPULIN, V.K., STEISENKO, YE.YA.

COUNTRY OF INFO--USSR

SOURCE--KOKS KHIM. 1970, (3), 30-3

DATE PUBLISHED--70

SUBJECT AREAS--AGRICULTURE, BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--SULFUR, FILTRATION, CHEMICAL PURIFICATION, ARSENIC, HILDEH, AGRICULTURE CHEMICAL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRA--1990/1418

STEP NO--UR/0068/70/000/003/0030/0033

CIRC ACCESSION NO--AP0109480

UNCLASSIFIED

2/2 011

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0109480

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A RAPID ECONOMICAL PRODUCTION PROCESS IS DESCRIBED FOR PREPG. COLLOIDAL S BY USING NATIVE RAW MATERIALS. FILTER CAKE FROM AN ARSENIC SODA S REFINERY WAS DILD. WITH THE FILTRATE IN A REPULPING APP., WHERE THE S CONCN. WAS REDUCED FROM 60 TO 20PERCENT. THE FILTRATE WAS THEN PIPED INTO A CIRCULATING COLLECTOR AND THE SLURRY LOADED INTO A CENTRIFUGE, WHERE THE S, RINSED WITH WATER, MAINTAINED A SOLIDS TO LIQ. RATION OF 1 IS TO 1.75-2.0. ABOUT 20PERCENT OF THE RINSING LIQ. WAS RETURNED TO THE COLLECTOR AND THAT REMAINING WAS USED TO DISSOLVE THE SODA. AFTER THE SALT CONCN. WAS REDUCED, THE SOLN. WAS RETURNED TO THE SLURRY PREPG. REPULPER. THE EXCESS CIRCULATING FILTRATE WAS THEN COMBINED WITH AN ABSORBING SOLN., THROUGH A FROTH COLLECTOR AND VACUUM FILTER, FOR S PURIFICATION. THE RINSED S, DRIED TO A MOISTURE CONTENT OF 10-12PERCENT, WAS LOADED AS FINES INTO A HOPPER WITH AGITATOR THEN INTO A MIXER FOR PROCESSING WITH SULFITE CAUSTIC. THE COMPONENTS WERE MIXED AND NEUTRALIZED, WETTED, AND LOOSENEED FOR FINAL DELIVERY AT 9-7PERCENT MOISTURE AND 40-500GREES. SUCH COLLOIDAL S CAN BE STORED UNSEALED FOR ABOUT 3 YEARS, RETAINING ITS QUALITY IN SPITE OF ALMOST COMPLETE MOISTURE LOSS; IN CONCS. OF 0.5 TO 1PERCENT IT WAS EFFECTIVE FOR TREATING APPLE TREES AND GRAPEVINES AGAINST POWDERY MILDEN.

UNCLASSIFIED

USSR

UDC: 533.951

TUMAKAYEV, G. K., ZHIKHAREVA, T. V., and LAZOVSKAYA, V. R.

"Kinetics of the Physico-Chemical Processes in a Shock Wave of Mercury Vapor: Part 2, the Relaxation Zone; Initial Ionization Region"

Leningrad, Zhurnal tekhnicheskoy fiziki, No 3, 1973, pp 579-587

Abstract: The first part of this article appeared in the journal named above (vol 16, 1971, p 1986). In the second part, given in the present paper, an analysis is made of the kinetics of excitation and ionization of mercury atoms in the relaxation zone of the shock wave path through mercury vapor. The basis of this analysis is provided by experimental data obtained by the authors in an earlier paper (G. K. Tumakayev, et al, in the collection Aerofizicheskiye issledovaniya sverkhzvukovykh techeniy --- Aerophysical Investigations of Ultrasonic Currents -- edited by Yu. A. Dunayev, "Nauka," 1967) on the distribution of normal 6^1So and excited mercury atoms in states $6^3\text{Po}_{1,2}$ and on the electron concentration behind the front of the shock wave. It is found that, for Mach numbers between 7 and 15, the population of the block of $6^3\text{Po}_{1,2}$ states in the whole region of initial ionization is the result $1/2$

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UDC: 533.951

TUMAKAYEV, G. K., et al, Zhurnal tekhnicheskoy fiziki, No 3, 1973, pp 579-587

of inelastic electron-atom collisions. The authors express their thanks to Yu. A. Dunayev for his discussion of the work and to R. N. Orlova for her assistance with the computations.

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USSR

UDC 535.215.6

GORODETSKIY, S.M., GRIGOR'YEVA, G.M., KREYNIN, L.B., LAZOVSKIY, V.V., LANDSMAN, A.P., SOMINSKIY, M.S.

"Effect Of Electron Irradiation On The Recombination Parameters Of p-Silicon And The Photoelectric Characteristics Of Silicon n-p Junctions"

V sb. Radiatsion. fiz. nemet. kristallov (Radiation Physics Of Nonmetal Crystals--Collection Of Works), Minsk, Nauka i tekhn., 1970, pp 159-266 (from RZh--Elektronika i yeye primeneniye, No 1, January 1971, Abstract No 1B269)

Translation: The results are discussed of an investigation of the bombardment of silicon photoconverters by electrons in the 0.5--18 Mev range of energies. As follows from the photoelectric characteristics presented, impairment of the photoconverters by electrons is characteristic for the case of the action of penetrating hard radiation. The energy dependence was experimentally found of the damage factor of the p-silicon base with a resistivity of 1 ohm.cm. An analysis of the changes of the dependences of the lifetime on the injection level and the temperature made it possible to draw the preliminary conclusion that the center determining the decrease of the lifetime of the p-silicon irradiated by electrons is found at 0.2 ev above the top of the valence band and has a ratio of the electron and hole capture cross sections of ~ 100 . 6 ill. 17 ref.

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USSR

UDC 537.311.33:546.28

GORODETSKIY, S.M., LAZOVSKIY, V.V.

"Recombination Characteristics Of p-Silicon Irradiated By Fast Electrons"

V sb. Radiatsion. fiz. nemet. kristallov (Radiation Physics Of Nonmetal Crystals--Collection Of Works), Minsk, Nauka i tekhn., 1970, pp 100-105 (from RZh--Elektronika i yeye primeneniya, No 1, January 1971, Abstract No 1828)

Translation: The lifetime was measured of minority carriers in p-silicon with a concentration of oxygen of 10^{18} cm^{-3} and with a resistivity of 1 ohm.cm, up to and after irradiation by electrons with energies of 1 and 18 Mev. An investigation of the dependences of the lifetime of the electrons on the injection level and temperature, up to and after irradiation, shows that the fast electrons with energies of 1 and 18 Mev inject the same center, located at $E_V + 0.2 \text{ eV}$, recombination across which progresses in accordance with Shockley--Reed Statistics. The ratio of the electron-capture cross section with an empty center to the hole-capture cross section filled lies in the limits from 50 to 100 which is characteristic for centers of the donor type. 3 ill. 10 ref. Summary.

1/1

USSR

UDC: 539.182.8

CHEPELEVA, I. V., LAZUKIN, V. N., OZHERNEL'YEV, B. V., and
DEMBOVSKIY, S. A.

"Electron Paramagnetic Resonance of Fe^{3+} Ions in Chalcogenide
Glasses As_2Se_3 and TlAsSe_2 "

Moscow, Doklady Akademii nauk SSSR, vol 204, No 2, 1972, pp 324-
327

Abstract: This paper describes experiments performed to investigate the electron paramagnetic resonance of Fe^{3+} ions in As_2Se_3 chalcogenide glasses in the wavelength range of 3.2 cm using an RE-1301 spectrometer at 293 and 77° K. Observations were also made with a superheterodyne spectrometer at 4.2° K. Four groups of electron paramagnetic resonance spectra are arranged according to similarities in shape, effective g-factor, and temperature dependence. Samples of the spectra are shown, and a curve of the magnetic susceptibility of the chalcogenide glasses as a function of the temperature is plotted. It is found that the spectra of the four groups can be explained by the spin Hamiltonian. The authors thank N. Ye. Kask for observing the spectra at 4.2° K, and V. N. Prudnikov for investigating the magnetic susceptibility.

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1/2 014

UNCLASSIFIED

PROCESSING DATE--16OCT70

TITLE--CHARACTER OF CHEMICAL BONDS IN A VANADYL COMPLEX FOR SOME OXIDE
GLASSES STUDIED FROM PARAMAGNETIC RESONANCE AND ELECTRON ABSORPTION
AUTHOR--(05)-BUGOMOLOVA, L.O., DOLGOLENKO, T.F., LAZIKIN, V.N., NOZORINA,
YE.N., PETROVYKH, N.V.
COUNTRY OF INFO--USSR

SOURCE--DOKL. AKAD. NAUK SSSR 1970, 191(1), 54-7

DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS, CHEMISTRY

TOPIC TAGS--VANADIUM COMPLEX, OXIDE GLASS, EPR SPECTRUM, MOLECULAR
ORBITAL, GLASS COMPOSITION, CHEMICAL BONDING

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1993/0505

STEP NO--UR/0020/70/191/001/0054/0057

CIRC ACCESSION NO--AT0113396

UNCLASSIFIED

2/2 014

UNCLASSIFIED

PROCESSING DATE--160CT70

CIRC ACCESSION NO--AT0113396

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE ELECTRON ABSORPTION AND PMR SPECTRA OF VO PRIME2 POSITIVE IN B SUB2 O SUB3 NEGATIVE BAO MINUS V SUB2 O SUB5, SIO SUB2 MINUS BAO MINUS V SUB2 O SUB5, AND P SUB2 O SUB5 MINUS BAO MINUS V SUB2 O SUB5 GLASSES (CONTG. 1-5 PERCENT V SUB2 O SUB5) WERE MEASURED AT LIQ.-N TEMPS. AS A FUNCTION OF THE GLASS COMPN. THE NEW EXPTL. DATA AND THE EARLIER PUBLISHED DATA ON THE EPR SPECTRA OF V GLASSES (B., ET AL. 1967) WERE INTERPRETED WITHIN THE MO THEORY. THE RESULTS SUGGESTS THAT IN THE GLASSES STUDIED, VANADYL FORMS C SUB4 V TYPE SYMMETRY COMPLEXES AND THE UNPAIRED ELECTRON IS LOCALIZED ON THE B SUB2 O TYPE ORBITAL, CONSTRUCTED FROM 3D SUBXY ORBITAL OF V PRIME4 POSITIVE AND 2RHO ORBITALS OF O LIGANDS. THE COEFFS. BETA SUB1 AND BETA SUB1 PRIME AT THE ED SUBXY NEGATIVE AND 2RHO ORBITALS, RESP., ARE DETERM. BY THE DEGREE OF LOCALIZATION OF THE UNPAIRED ELECTRON ON THE RESP. ORBITALS AND, THEREFORE, CHARACTERIZE THE PI BONDING IN THE EQUATORIAL PLANE OF THE COMPLEX. ANALOGOUS, B SUB1 EPSILON ORBITAL OF THE COMPLEX IS CONSTRUCTED FROM 3D SUBX PRIME2 MINUS SUBY PRIME2 ORBITALS OF V PRIME4 POSITIVE AND RHO ORBITALS OF THE VANADYL O AND THE CORRESPONDING COEFFS. (ALPHA AND GAMMA) AT THE D FUNCTIONS CHARACTERIZE THE SIGMA BONDING IN THE EQUATORIAL PLANE AND THE PI BONDING OF V WITH THE VANADYL O. EVALUATION OF THE PARAMETERS OF CHEM. BONDS BY THE MO LCAO METHOD CONFIRMED THAT THE COVALENCY OF PI AND SIGMA BONDS IN THE V COMPLEX INCREASES WITH THE AMT. OF THE GLASS FORMING AGENT IN THE ORDER P SUB2 O SUB5 YIELDS SIO SUB2 YIELDS B SUB2 O SUB3. FACILITY: MOSK. GOS. UNIV. IM. LOMONOSOVA, MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC 546.185

LAZUKINA, L. A., KOTLYAR, N. G., KUKHAR', V. P., and SOLODUSHENKOV, Institute of Organic Chemistry, Ukrainian Academy of Sciences

"Phosphazo-1,3,5-Triazines. VI. Phosphorus-Containing Compounds Based on 2,4-Diamino-6-Halomethyl-1,3,5-Triazines"

Leningrad, Zhurnal Obshchey Khimii, Vol 41, No 11, Nov 1971, pp 2,386-2,389

Abstract: The synthesis of phosphorus-containing compounds based on 2,4-diamino-6-haloalkyl-1,3,5-triazines is of interest in connection with study of the physiological activity of this group of compounds. Several different approaches to the synthesis were tried. In particular, the attempt to obtain a phosphoran from a phosphonium salt by the action of sodium methoxide in methanol, was unsuccessful. Sixteen triazines were synthesized.

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USSR

UDC 577.1:625.7/9

LAZUR'YEVSKIY, G. V. and NIKOLAYEVA, L. A.

"Cannabinoids (Narcotic Substances from Hemp)"

Kannabinoidy (Narkoticheskiye veshchestva konopli) (cf. English above), Kishinev, "Shtiintsa", 1972, 68 p, ill, 40 k (from RZh-Biologicheskaya Khimiya, No 24, Dec 72, Abstract No 24 F 2232 K)

Translation: The book consists of the following chapters: narcotic substances; hemp and hashish; specific substances from hemp -cannabinoids; methods of finding hashish and its phenol components; isolation of individual cannabinoids and hashish; physiological properties of hashish and cannabinoids; psychochemistry and pharmacology (advances and prospects).

1/1

USSR

AKHIYEZER, I. A., LAZURIK-EL'TSUFIN, V. T., Physicotechnical Institute,
Academy of Sciences of the UkrSSR, Khar'kov

"On Excitation of Ultrasound in Metals by a Beam of Charged Particles"

Leningrad, Fizika Tverdogo Tela, Vol 14, No 12, Dec 72, pp 3693-3694

Abstract: The authors investigate the excitation of ultrasound in metal plates by beams of charged particles in accordance with the dynamic load mechanisms. As the beam is dissipated and decelerated by the solid material of the plate, it transmits momentum to the metal atoms, and thus sets up a body force or pressure, causing acoustic oscillations. The longitudinal load (with respect to the incident beam) is calculated for cases of electron (positron) and proton beams. Exact formulas are derived for thick and thin targets. The results of numerical calculations of pressure are graphed for plates 0.01 cm thick.

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USSR

AKHIEZER, I. A., LAZURIK-EL'TSUFIN, V. T., Khar'kov State University imeni
A. M. Gor'kiy

"Dynamic Effect During Transmission of Charged Particle Beams in Solids"
Moscow, Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki, Vol 61, No 5(11),
Nov 72, pp 1776-1779

Abstract: The authors determine dynamic loads in a solid when beams of charged particles pass through it. It is shown that in the moderately high-energy region loads increase linearly with an increase in beam energy. At high energies (up to a few hundred MeV) the loads in the case of electron (positron) beams are independent of energy, while in the case of a proton beam they decrease with increasing energy. A method is proposed for experimentally verifying the theory by measuring the amplitude of the sound induced by the beam. The authors thank A. I. Akhiezer and M. D. Volovik for constructive criticism.

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USSR

AKHIEZER, I. A.; BARTS, B. I.; LAZURIK-EL'TSUFIN, V. T. (Khark'ov State University)

"Oscillations of a Drop of Fermi Liquid and Giant Resonance in Medium and Heavy Nuclei"

Moscow, Yadernaya Fizika; May, 1972; pp 863-8

ABSTRACT: Giant resonance in nuclear reactions with medium and heavy nuclei was considered in the model of a drop of Fermi liquid. Both purely nuclear and electrical interactions between nucleons were taken into account. Within this model it is possible to describe the experimentally observed position of giant dipole resonance in photoneuclear reactions with a large number of nuclei: in particular, to explain a slower decrease of the resonant energy with increasing A than according to the usual law for liquids $A^{-1/3}$. The parameters involved were taken from an analysis of data not related to giant resonance. A number of experimental points do not fall on the curve corresponding to the excitation of dipole oscillations but fall near the calculated curves corresponding to $\lambda = 0$ and $\lambda = 2$. Consequently, the experimental determination of the multipolarity of the corresponding levels should be of great interest.

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USSR

AKHIEZER, I. A., BARTS, B. I., ~~LAZURIK, ELITSURIN, V. T.~~ (Kharkov State University imeni A. M. Gorkiy)

"Giant Resonance in a Model of a Fermi-Liquid Drop"

Moscow, Pis'ma v Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki (Letters to the Journal of Experimental and Theoretical Physics), Vol 14, No 9, 5 Nov 71, pp 535-538

Abstract: Giant resonance in nuclear reactions is related to the collective (or bulk) vibrations of the surface and nuclear particles. An attempt is made to understand giant resonance in real nuclei by considering the finite dimensions of the nucleus in a Fermi-liquid drop and by comparing theoretical and experimental data on dipole resonance in photonuclear reactions. The drop is viewed as a sphere, and both nuclear and electrical forces acting between the nucleons are considered.

The model of a Fermi-liquid drop with a free boundary is shown to be a good description of giant dipole resonance for a large number of nuclei.

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USSR

AKHIEZER, I. A. et al, Pis'ma v Zhurnal Eksperimental'noy i
Teoreticheskoy Fiziki, Vol 14, No 9, 5 Nov 71, pp 535-536

The authors thank A. I. Akhiezer for his advice and I. S. Shapiro
for valuable discussions. Orig. art. has 8 refs.

2/2

Acc. Nr: ,

AP0045589

Ref. Code: -TR 0463

PRIMARY SOURCE: Molekulyarnaya Biologiya, 1970, Vol 4, Nr 1,
pp 137-143

MELTING OF DNA WITH DEFECTS IN ITS SECONDARY STRUCTURE
Berestetskaya, I. V.; Kosaganov, Yu. N.; Lazutkin, Yu. S.
Trifonov, E. N.; Frank-Kamenetskiy, M. D.
Institute of Atomic Energy, USSR, Moscow

It is shown that the increase in width of the melting range of DNA due to shear degradation is in accordance with the recently developed theory [5]. Since this increase is due to the disruption of the base stacking interaction at the ends of helical regions, the measurement of the increase of the melting width can be used as a method for determination of concentration of defects (locally denaturated sites) in DNA of high molecular weight. Potentialities of the proposed thermodynamic method are illustrated by the experiments with DNA samples containing defects induced by UV-irradiation. The

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concentration of defects in these DNA samples was estimated also by means of recently proposed kinetic method [1]. Analysis of the question concerning the sensitivity of both methods in regard to the defects of different origin showed that as it has been expected these methods did not distinguish between the ends of sheared molecules and the ends of helical regions neighbouring the locally denaturated sites. This result confirms the validity of the use of shear degraded DNA for calibration of both methods.

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AUTHOR-- LAZUR, YEVSKIY, G. V., VICE-PRESIDENT, MOLDAVIAN ACADEMY
OF SCIENCES

TITLE-- NEW MEMBERS OF THE ACADEMY OF SCIENCES OF THE M.S.S.R.

NEWSPAPER-- SOVETSKAYA MOLDAVIYA, JANUARY 6, 1970, P 3, COLS 5-8

ABSTRACT-- THE FOLLOWING MOLDAVIAN SCIENTISTS HAVE BEEN ELECTED
CORRESPONDING MEMBERS OF THE ACADEMY OF SCIENCES OF THE M.S.S.R.--

DOCTORS OF SCIENCES YURIY YEVGEN, YEVICH PERLIN AND VSEVOLOD
ANATOL YEVICH MOSKALENKO, DEPARTMENT OF PHYSICAL-TECHNICAL AND
MATHEMATICAL SCIENCES, SPECIALTY "THEORETICAL PHYSICS". THE FORMER
HEADS THE CHAIR OF THEORETICAL PHYSICS AT THE KISHINEV UNIVERSITY
AND WORKS IN THE AREA OF SEMICONDUCTORS AND DIELECTRICS, AND THE
LATTER HEADS THE DEPARTMENT OF STATISTICAL PHYSICS OF THE
MOLDAVIAN ACADEMY OF SCIENCES AND WORKS IN THE AREA OF THE QUANTUM
THEORY OF EXCITONS.

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SERGEY IVANOVICH RADAUTSAN, DOCTOR OF TECHNICAL SCIENCES, PRESIDENT OF THE KISHINEV POLYTECHNIC INSTITUTE, PROMINENT IN THE FIELD OF SEMICONDUCTOR PHYSICS AND CHEMISTRY.

YURIY NIKOLAYEVICH PETROV, DOCTOR OF TECHNICAL SCIENCES, PROFESSOR, HEAD OF THE CHAIR OF THE MACHINERY REPAIR AT THE KISHINEV AGRICULTURAL INSTITUTE, LABORATORY HEAD AT THE INSTITUTE OF APPLIED PHYSICS, HAS BEEN ELECTED ACTIVE MEMBER IN THE ELECTROCHEMICAL MACHINING OF METALS SPECIALTY.

IZRAIL TSUDIKOVICH GOKHBERG, HEAD OF THE DEPARTMENT OF FUNCTIONAL ANALYSIS AND APPROXIMATE METHODS OF THE INSTITUTE OF MATHEMATICS AND THE COMPUTATION CENTER OF THE ACADEMY, HAS BEEN ELECTED CORRESPONDING MEMBER.

THE MOLDAVIAN ACADEMY, ESTABLISHED IN 1961, NOW HAS 17 ACTIVE MEMBERS AND 20 CORRESPONDING MEMBERS, 9 OF WHOM ARE SPECIALISTS IN SOCIAL SCIENCES, 18 IN BIOLOGICAL AND CHEMICAL SCIENCES, AND 10 IN PHYSICAL-TECHNICAL AND MATHEMATICAL SCIENCES. ALL TOTAL, THE ACADEMY EMPLOYS MORE THAN 2,000 PEOPLE, INCLUDING 700 SCIENCE ASSOCIATES, 400 OF WHOM HOLD DOCTORAL AND CANDIDATES DEGREES.

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172 025 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--INTERMEDIATE STRUCTURE OF CROSS SECTIONS OF PHOTONEUTRON REACTIONS
ON MOLYBDENUM ISOTOPES -U-
AUTHOR--(05)-ISHKHANOV, B.S., KAPITONOV, I.M., LAZUTIN, YE.V., PISKAREV,
I.M., SHEVCHENKO, O.P.
COUNTRY OF INFO--USSR
SOURCE--YAD. FIZ. 1970, 11(3), 702-4
DATE PUBLISHED-----70
SUBJECT AREAS--PHYSICS, NUCLEAR SCIENCE AND TECHNOLOGY
TOPIC TAGS--PHOTONEUTRON, BETATRON, RESONANCE ABSORPTION, MOLYBDENUM
ISOTOPE, INTEGRAL CROSS SECTION
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1991/1079 STEP NO--UR/0367/70/011/001/0102/0104
CIRC ACCESSION NO--AP0110769
UNCLASSIFIED

2/2 025

UNCLASSIFIED

PROCESSING DATE--30 OCT 70

CIRC ACCESSION NO--AP0110769

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. PHOTO-N REACTIONS ON PRIME92 MO AND PRIME98 MO ARE INVESTIGATED BY USING A 35-MEV DEUTERON. CROSS SECTIONS OF THE REACTION (γ, n) EQUALS CROSS SECTIONS OF (γ, n) , PLUS 2 (CROSS SECTION OF $(\gamma, 2n)$ PLUS CROSS SECTION OF (γ, np) ; THERE ARE SIMILAR TO 15 RESONANCES FOR EACH CROSS SECTION. THE WIDTHS OF THE GIANT RESONANCES IN THE REACTION (γ, n) ON THE PRIME92 MO AND PRIME98 MO NUCLEI ARE 5 AND 7 MEV, RESP. FOR THE REACTIONS (γ, n) PLUS (γ, np) , THE VALUES OF THE INTEGRAL CROSS SECTIONS FOR PRIME92 MO AND PRIME98 MO ARE 1.12 PLUS OR MINUS 0.11 AND 1.10 PLUS OR MINUS 0.11 MEV-B, RESP. EXPTL. RESULTS ARE COMPARED TO THEORETICAL VALUES. THE EXPTL. VALUES SHOW A GREATER NO. OF RESONANCES. THE GREATEST DISCREPANCY BETWEEN THEORY AND EXPT. IS FOUND AT 24-30 MEV. FACILITY: INST. YAO. FIZ., MOSK. GOS. UNIV., MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC 621.391.2

LAZUTKIN, B. A.

"Some Additional Possibilities of Multichannel Detection Systems"

Moscow, Radiotekhnika i Elektronika, Vol 17, No 10, 1972, pp 2189-2191

Abstract: A study is made of a receiving system having m channels with separate inputs. During the observation period, this system receives an additive mixture of useful signal created by one source and noise created by several statistically independent sources. The solution of the problem of synthesizing the optimal receiver is reduced to finding the system of filters with the transmission coefficients $K_j(f)$ represented by the row matrix

$$K = \|K_1(f)K_2(f)\dots K_m(f)\|,$$

where $K_j(f)$ is the complex transmission coefficient of the j -th channel of the receiver. This insures the maximum plausibility ratio which coincides with the maximum signal/noise ratio for deterministic signals. The two-channel optimal detection-compensator receiver insures complete compensation for the correlated noise created from one point in space. The optimal compensator insures suppression of correlated noise independently of from what point in space the noise is created. Suppression is insured even when the sources of the signal and noise

- 6 -

USSR

LAZUTKIN, B. A., Radiotekhnika i Elektronika, Vol 17, No 10, 1972, pp 2189-2191

coincide in space and when the noise source is in the region of the side lobes of the directional antenna system pattern.

2/2

USSR

UDC 612.53+612.74

BERNSHTEYN, V. A., SINAYSKIY, M. M., GRUYEVA, L. G., LEVITINA, T. A., and LAZUTINA, T. P., Chair of Physiology, Extension of the Smolensk Institute of Physical Culture, Malakhovka, Moskovskaya Oblast

"Some Aspects of Thermoregulation During Muscle Work"

Leningrad, Fiziologicheskii Zhurnal SSSR imeni I. M. Sechenov, Vol 59, No 5, 1973, pp 819-827

Abstract: The investigation was performed on 12 athletic students pedaling a bicycle ergometer at a work load of 15 kgm/min/kg body weight for 30 min. At this rate of work, heart rate increases to a maximum of 174 beats/min, pulmonary ventilation to 730 ml/kg/min, and oxygen consumption to 30 ml/kg/min. During the so-called controlled hyperthermia which develops under minimum to moderate thermoinsulation, deep body temperature (measured in the ear near the tympanic membrane) rises uniformly from a control of 37.0°C to 39.4°C. However, excessive thermoinsulation (wearing a thick jacket) causes an additional uncontrolled rise in deep body temperature to a peak of 40.0°C. Skin temperature on the forehead rapidly increases during the first 9 minutes from 35.5 to 39.4°C, to exceed deep body temperature by 1.2°C, but falls subsequently to 37.7°C at the 30th minute. Sweating on the forehead begins with the local rise in temperature and then becomes proportional to deep body temperature and

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USSR

BERNSHTEYN, V. A., et al., Fiziologicheskii Zhurnal SSSR imeni I. M. Sechenov,
Vol 59, No 5, 1973, pp 819-827

thermoinsulation (from 0.2 $\text{mg}/\text{cm}^2/\text{min}$ in 3 minutes to 4.9 $\text{mg}/\text{cm}^2/\text{min}$ in 30 min). Even though not all the sweat evaporates, it is concluded that in steady-state work done with light thermoinsulation at a normal room temperature, about 3/5 of the total heat loss is due to evaporation of sweat.

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- 43 -

AA0052398

LAZUTKIN

A. G.

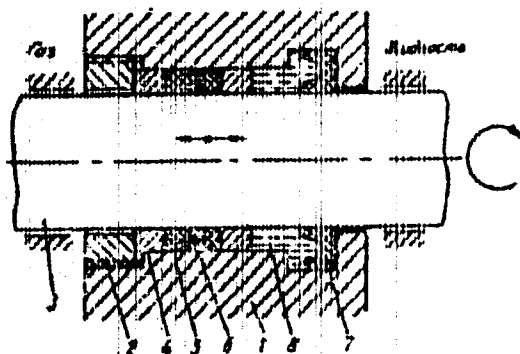
UR 0482

Soviet Inventions Illustrated, Section III Mechanical and General,
Derwent, 1-70

241850 SEAL for a rod which has reciprocating and rotating motion improves reliability of the seal separating the gas from the liquid. The rod 3 is fitted in the body 1 with a nut 2. The bronze 4, leather 5 and rubber 6 rings and a cup 7 provide a sealing space. The liquid fills the space 8 between them and provides a hydraulic seal. During the operation, when the liquid pressure exceeds the gas pressure the cup 7 will allow the liquid to pass into the space 8. This compresses the rings and prevents the gas escape into the liquid during the stroke. When the rod is stationary, gas is sealed by the rings which are held by the pressure of fluid in the space 8 maintained by the cup 7.
25.1.68 as 1211700/25-B.A.F.KICHIGIN et alia.
KARAG & TECHNICAL INST. (29.8.69) Bul 14/18.4.69.
Class 47f. Int.Cl.F 16j.

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AA0052398



Kichigin, A. F.; Shchepetkin, G. V.; Lazutkin, A. G.; Vakulin, P. N.
Karagandinskiy Politekhnicheskiy Institut

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USSR

UDC: 539.3

LAZUTKIN, D. F., Kursk

"The Problem of Nonstationary Temperature Deformations in an Unlimited, Anisotropic Medium"

Kiev, Prikladnaya Mekhanika, Vol 6, No 11, 1970, pp 67-72

Abstract: The dynamic problem is studied of the influence of internal heat sources on an unlimited, elastic, anisotropic space. The problem is solved in general form by a method using a four dimensional Fourier transform. As an example, the influence of heat sources located on plane $x_3 = 0$ and performing harmonic oscillations on an unlimited medium which has a common axis of second order thermal and elastic symmetry is studied.

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LAZUTKIN, V. N., Moscow

"Oscillations of a Hollow Piezoceramic Sphere"

Moscow, Akusticheskiy Zhurnal, Vol 17, No 4, 1971, pp 588 -592

Abstract : The analytical solution is given of the dynamic problem for a piezoceramic resonator in form of a hollow sphere with radial polarization. The problem leads to the combined solution of equations of motions and Maxwell equations by given boundary conditions for elastic and electric field tensors. The frequency equation and distribution rules of displacements on resonances of radial oscillations are presented, including the resonance "by periphery" and "by thickness". The presented solution can be used for any wall thickness of the sphere. In contrast to indicated other publications, the anisotropy of the material and the effect of electromechanical interaction on elastic constants are not disregarded. In consequence of considering the piezoeffect on elastic constants and the anisotropy of the material, the derived results can be used for the analysis of modern piezoceramic materials. One illustr., 21 formulas, five biblio. refs.

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USSR

ABDULLAYEVA, N. S., LBOV, G. S.

"Selection of Significant Characteristics for Diagnosis of Congenital Heart Defects"

Vopr. Kibernetiki [Problems of Cybernetics -- Collection of Works], No 51, Tashkent, 1972, pp 88-93 (Translated from Referativnyi Zhurnal Kibernetika, No 4, 1973, Abstract No 4V717, by the authors).

Translation: A method of random search adapted for the M-220 computer is used to develop the most informative characteristics for recognition of certain types of congenital heart defects.

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- 112 -

USSR

UDC: 51:155.001.57:681.1.06

LEBOV, G. S., NESGOVOROVA, G. P.

"Program for Selection of Informative Features by the Method of Random Search With Adaptation for the Minsk-22 Computer"

V sb. Vychisl. sistemy (Computer Systems--collection of works), vyp. 15, Novosibirsk, "Nauka", 1971, pp 95-104 (from RZh-Matematika, No 11, Nov 71, Abstract No 11V868)

Translation: A program is set up for selecting from a given n-dimensional subspace of distinctive features the subspace of least dimensionality whose utilization minimizes the number of errors α . The characteristics of the program are described and an illustrative example is given.

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USSR

UDC: 51:155.001.57:681.3.06

LEBOV, G. S., NESGOVOROVA, G. P.

"Program of Selection of Informative Characteristics by the Method of Random Search With Adaptation for the Minsk-22 Computer"

V sb. Vychisl. sistemy (Computer Systems--collection of works), vyp. 45, Novosibirsk, "Nauka", 1971, pp 95-104 (from RZh-Kibernetika, No 11, Nov 71, Abstract No 11V868)

Translation: A program is compiled for selecting from a predetermined n-dimensional subspace of characteristics -- the effective subspace of lowest dimensionality whose use minimizes the number of errors α . The characteristics of the program are described and a verifying example is given.

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USSR

UDC: 51.155.001.57:681.3.06

LBOV, G. S.

"Programs for Random Search With Adaptation"

V sb. Vychisl. sistemy (Computer Systems--collection of works), vyp. 25, Novosibirsk, "Nauka", 1971, pp 56-57 (from RZh-Kibernetika, No 11, Nov 71, Abstract No 11V867)

Translation: Programs are presented for solving problems on selection of the most effective subsystem of m dependent characteristics for some initial system consisting of n characteristics. The effectiveness of the selection is determined by the predetermined criterion F which is chosen as a function of the formulation of the problem. The method of random search with adaptation as used consists in determining the most effective subsystem with the aid of "reward" and "punishment" of individual characteristics. Programs are presented which realize random search with adaptation for various computers. A. Khalamayzer.

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USSR

UDC: 518.5:681.3.06

LBOV, G. S.

"A Random Search Program With Adaptation for the M-220 Computer"

V sb. Vychisl. sistem (Computer Systems--collection of works), vyp. 45, Novosibirsk, "Nauka", 1971, pp 58-83 (from RZh-Kibernetika, No 12, Dec 71, Abstract No 12V985)

Translation: Two programs are proposed for selecting an effective system of tags. Program C effects search of a subsystem of tags whose utilization minimizes losses in C (or minimizes the number of errors a if the matrix of C is not given). Program R effects search of a system of tags which gives a maximum correlation coefficient. Abbreviated algorithms of the programs are given together with instructions for using them.
A. Khamayzer.

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- 21 -

USSR

UDC 548.0:535.16

KUANG, IE, ROZHANSKIY, V. N., Institute of Crystallography, Academy of Sciences
USSR

"Peculiarities of the Internal Structure of Threadlike Crystals of NaCl,
KCl and KBr at High Temperatures"

Moscow, Kristallografiya, Vol 18, No 2, Mar-Apr 73, pp 413-415.

Abstract: The internal friction of threadlike crystals was measured in a vacuum installation. All curves showed a clear maximum in the temperature interval between 100 and 150° for measurements at frequencies up to 500 Hz. Some threadlike crystals showed a second maximum in the 30-70° C interval. The variation in height of the peak on oscillating amplitude and crystal thickness indicates that it is related to the movement of dislocations. This peak disappears in well-annealed crystals. However, the introduction of new dislocations by plastic twisting does not restore the peak. The annealing process eliminates not only dislocations, but also point defects, which are not restored by subsequent deformation; therefore, the peak probably results from the interaction of dislocations with point defects.

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AUTHOR-- LEBANIDZE, G., CORRESPONDENT

TITLE-- AN "ELECTRON MANAGER" HAS BEEN BORN

NEWSPAPER-- PRAVDA, JANUARY 20, 1970, P 2, COLS 7-8

ABSTRACT-- THE CONTROL COMPUTATION SYSTEM, "M-1000", DEVELOPED BY THE TBILISI SCIENTIFIC-RESEARCH INSTITUTE OF INSTRUMENT CONSTRUCTION AND AUTOMATION, HAS BEEN ACCEPTED BY A STATE COMMISSION AND RECOMMENDED FOR SERIAL PRODUCTION. ACCORDING TO G. GEGESHIDZE, DOCTOR OF TECHNICAL SCIENCES, PROFESSOR, DIRECTOR OF THE INSTITUTE, THE INSTITUTE COLLABORATED IN THIS EFFORT WITH SCIENTISTS AND PLANT WORKERS OF THE MINISTRY OF INSTRUMENT CONSTRUCTION, AUTOMATION AND CONTROL SYSTEMS. THE M-1000 IS THE FIRST ASVT, A COMPREHENSIVE SYSTEM OF COMPUTATION EQUIPMENT.

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USSR

UDC 531.765(047)

IVANOV, V. A., Candidate of Technical Sciences, ~~LEEANOV~~, S. F., Engineer

"Angular Accelerometers"

Moscow, Pribory i Sistemy Upravleniya, No 2, 1972, pp 32-32

Abstract: Angular accelerometers are divided into two groups: those for measuring the parameters of relative motion and those for measuring the parameters of absolute motion. Schematics and the technical specifications are presented for angular accelerometers of the first group with a solid inertial element and angular accelerometers of the second group with solid and inertial elements. The functioning of the accelerometers is described. References are given to the foreign and Soviet publications in which the mentioned accelerometers were introduced and tested.

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USSR

UDC: 621.372.832.8

LEBED', B. M., NIKOLAYEVA, K. S.

"A Y-Circulator Based on Lumped Reactance Elements"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obrantsy, Tovarnyye Znaki,
No 29, 1970, Soviet Patent No 281580, Class 21, filed 28 Dec 67, p 62

Abstract: This Author's Certificate introduces a Y-circulator based on lumped reactance elements. The device contains a central section made in the form of inductance coils which surround ferrite discs. Also incorporated in the installation are grounded covers and magnets. As a distinguishing feature of the patent, the electrical characteristics of the circulator are improved by making the coils in the form of thin foil frames which form a star connection with the common point connected to brass discs making a capacitance in series between the coils and the grounded covers.

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USSR

UDC 621.372.832.8

LEBED', B. M. and NIKOLAYEVA, K. S.

"Multi-Branch Tunable Circulators"

Elektron. tekhnika. Nauch.-tekhn. sb. Ferrit. tekhn. (Electronics Technology. Scientific-Technical Collection of Articles. Ferrite Technology), 1971, vyp. 4 (31), pp 80-93 (from RZh-Radiotekhnika, No 11, Nov 72, Abstract No 11 B148)

Translation: In a quasistatic approximation, the authors obtain the scattering matrix of an n-branch, symmetric inductance compound which has been applied onto a ferrite resonator. Conditions have been formulated for the application of the compound onto the resonator for instances of $n=3$ and $n=4$. The scattering matrix elements are determined for three and four arm circulators. Approximate relationships are obtained which are suitable for engineering calculations. It is possible to return the working frequency of the circulators in the frequency range with 2:1 overlapping. The calculated results are verified by experimental data. Original article: six illustrations and six bibliographic entries. Resume.

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USSR

UDK: 621.372.832.8

NIKOLAYEVA, K. S. and LEBED', B. M.

"Optimal Characteristics of Y-Circulators Based on IC-Elements"

Elektron. tekhnika. Nauch.-tekhn. sb. Ferrit. tekhn. (Electronics Technology. Scientific-Technical Collection of Articles. Ferrite Technology), 1971, vyp. 4(31), pp 65-79 (from RZh-Radiotekhnika, No 11, Nov 72, Abstract No 11 B150)

Translation: The authors formulate the conditions for the optimization of the electric and design parameters of Y-circulators based on IC-elements. Optimal relationships are obtained among the parameters of the ferrite cores from the point of view of minimizing introduced errors. Analytical formulas are derived for calculating introduced errors, working frequency bands, the parameters of the IC-elements, and the conditions for the temperature stabilisation of the electric characteristics of circulators. The results of the calculations are presented in the form of graphs which are experimentally supported. Original article: four illustrations, two tables, and 16 bibliographic entries. Resume.

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I/2 012 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--INDUSTRIAL TESTING OF COLORED SOLE RUBBERS PREPARED WITH HYDROGEN
XANTHANE 5,IMINO,1,2,4,DITHIAZOLIDIN,3,THIONE -U-
AUTHOR-(04)-MELAMED, CH.L., BLOKH, G.A., TSIPENYUK, E.V., LEBED, I.G.

COUNTRY OF INFO--USSR

SOURCE--KOZH. OBUV. PROM. 1970, 12(2), 54-6

DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS, MILITARY SCIENCES

TOPIC TAGS--FOOTGEAR, STYRENE, VULCANIZATION, THIAZOLE, RUBBER/(U)SKMS3ORP
STYRENE RUBBER, (U)BS45AK SYNTHETIC RUBBER

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAHE--2000/0938

STEP NO--UR/0498/70/012/002/0054/0056

CIRC ACCESSION NO--AP0124598

UNCLASSIFIED

2/2 012

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0124598

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. HYDROGEN XANTHANE IS A GOOD
VULCANIZATION ACCELERATOR FOR STYRENE RESINS OF THE TYPE SKMS-30RP AND
DS-45-AK AND MAY REPLACE CAPTAX AND ALTAX. FOR MIXTS. CONTG. NATURAL
RUBBER A MIXT. OF HYDROGEN XANTHANE AND CAPTAX OR ALTAX WAS USED.

UNCLASSIFIED

USSR

UDC 616.988.43

SALAZHOV, Ye. L., KOSTERIN, Ye. V., MUSTAFAYEV, G. A., and LITSENKO, L. A., All-Union Institute of Experimental Veterinary Medicine

"Foot-and-Mouth Disease in Man"

Moscow, Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, Vol. 47, No 6, Jun 70, pp 87-90

Abstract: Two cases of foot-and-mouth disease in man were studied in Kostromskaya oblast in order to obtain data on the subtype (variant) of foot-and-mouth disease virus affecting man. Not much is known about the serum antibodies in patients suffering from the disease. In both cases, the same type and variant of the virus, A₂₂, was responsible for the disease. Antibodies to this virus variant were found in the blood of both patients. These were the only two cases reported in humans in the oblast. Extensive measures to control the disease among domesticated animals and people were taken.

1/2 018 UNCLASSIFIED
TITLE--FOOT AND MOUTH DISEASE IN MAN -U-

PROCESSING DATE--04DEC70

AUTHOR--(04)-SALAZHOV, YE.L., KOSTERIN, YE.V., MUSTAFAYEV, G.A., LEBEDENKO,
L.A.

COUNTRY OF INFO--USSR

SOURCE--ZHURNAL MIKROBIOLOGII, EPIDEMIOLOGII I IMMUNOLOGII, 1970, NR 6,
PP 87-90

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--FOOT AND MOUTH DISEASE, GEOGRAPHIC LOCATION, MAN, DIAGNOSTIC
MEDICINE, ANTIBODY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--3001/0419

STEP NO--UR/0016/70/000/006/0087/0090

GIRC ACCESSION NO--AP0126172

UNCLASSIFIED

2/2 018 UNCLASSIFIED PROCESSING DATE--04DEC70
CIRC ACCESSION NO--AP0126172
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. TWO CASES OF FOOT AND MOUTH
DISEASE WERE DIAGNOSED IN 1967 IN KOSTROMA REGION. THE DIAGNOSIS WAS
MADE ON THE BASIS OF EPIZOOTIC, ANAMNESTIC AND CLINICAL DATA. SICK
ANIMALS SERVED AS THE SOURCE OF INFECTION: IN ONE CASE INFECTION WAS
TRANSMITTED THROUGH MILK FROM A COW, AND IN ANOTHER, BY CONTACT WITH
INFECTED ANIMAL. FOOT AND MOUTH DISEASE WAS DIAGNOSED BY EXAMINATION
OF MATERIAL OBTAINED FROM SICK ANIMALS AND ONE OF THE PATIENTS; IN ALL
OF THE CASES THE DISEASE PROVED TO BE CAUSED BY THE VIRUS BELONGING TO
THE SAME TYPE AND OF THE SAME VARIANT, A SUB22, AGAINST WHICH ANTIBODIES
WERE REVEALED IN THE BLOOD SERUM OF THE PATIENTS. FACILITY:
VSESOUZNYI INSTITUT EKSPERIMENTAL'NOY VETERINARI.

UNCLASSIFIED

1/2 013 UNCLASSIFIED PROCESSING DATE--21OCT70
TITLE--SYSTEM OF INDICES FOR PLANNING PRODUCT QUALITY -U-
AUTHOR--LEBEDEV, A.
COUNTRY OF INFO--USSR
SOURCE--STANDARTY I KACHESTVO, 1970, NR 5, PP 64-67
DATE PUBLISHED-----70

SUBJECT AREAS--BEHAVIORAL AND SOCIAL SCIENCES, MECH., IND., CIVIL AND
MARINE ENGR
TOPIC TAGS--QUALITY CONTROL, INDUSTRIAL PLANNING, INDUSTRIAL PLANT,
INDUSTRIAL STANDARD, PRODUCTION STANDARD

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1999/0117 STEP NO--UR/0422/70/000/005/0064/0067
CIRC ACCESSION NO--AP0122383
UNCLASSIFIED

2/2 013

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0122383

ABSTRACT/EXTRACT--(U) GP-O- ABSTRACT. A SYSTEM OF INDICES NECESSARY FOR
PLANNING THE PRODUCT QUALITY ON THE ANTIONAL, DEPARTMENTAL OR FACTORY
LARGE SCALE MUST MEET A NUMBER OF REQUIREMENTS, FORWARDED BY THE AUTHOR.
TABLES 2.

UNCLASSIFIED

Conferences

USSR

PISARENKO, G. S. and LEBEDEV, A. A.

"Third International Conference on Rupture"

Kiev, Problemy Prochnosti, No 2, Feb 74, pp 121-123

Abstract: The Third International Conference on Rupture was held in Munich 8-13 April 1973. Over 900 scientists and specialists from 27 countries including the USSR, USA, England, Japan, Czechoslovakia, Canada, both Germanys, Italy, France and Poland took part in the work of the conference, hearing 296 reports. Subjects covered included: analysis of models of rupture based on representation of the mechanics of a continuum, linear mechanics and the kinetics of microstructural effects; individual aspects of the mechanics of rupture in the elastic-plastic stage, the study of the influence of various factors on the ductility of rupture and its relationship with other criteria; the concept of the criterion of crack opening; the development of new criteria such as the "deformation energy density"; experimental determination of the tendency of materials toward brittle rupture; fatigue rupture; technical applications; and the rupture of glass, ceramics, rock and concrete.

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USSR

UDC 629.76/.78.015:533.6

LEBEDEV, A. A., BARANOV, V. N., KRASIL'SHCHIKOV, M. N., MALYSHEV, V. V.

"Optimal Control Upon Entry Into the Atmosphere"

V sb. Upravleniye v kosmose. T. 1 (Control in Space. Vol 1 -- Collection of Works), Moscow, "Nauka", 1972, pp 256-266 (from RZh-Mekhanika, No 3, Mar 73, Abstract No 3B346)

Translation: The problem of the synthesis of an autonomous control system for a space device entering the earth's atmosphere with a velocity close to the first cosmic velocity is discussed. 10 ref. Authors' abstract.

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- 17 -

USSR

UIC: 621.315.592

GUTKIN, A. A., LEBEDEV, A. A., RADU, R. K., TALALAKIN, G. N., and
SHAPOSHNIKOVA, T. A.

"Investigating the Spectra of Photoionization Cross Sections in
GaAs Alloyed with Cr, Using the Photocapacitive Effect in Struc-
tures with a Potential Barrier"

Leningrad, Fizika i tekhnika poluprovodnikov, No 10, 1972, pp 1954-
1960

Abstract: The purpose of this paper is to investigate the photo-
capacities in GaAs structures alloyed with Cr, and thereby obtain
photoionization cross section spectra of deep centers. This idea
is based on theoretical work published in earlier papers regarding
an impurity photoeffect in the space-charge layer of a p-n junc-
tion and its connection with the parameters of impurity centers.
Using the results of this theoretical work, the authors qualitative-
ly explain the absorption spectra characteristic of the three types
of specimens investigated. These are: surface-barrier diodes ob-
tained by chemical precipitation of gold on n-type GaAs alloyed with
Cr; p-i-n GaAs diodes obtained by successive diffusion of chromium
and zinc in n-type GaAs; p-i-n GaAs diodes obtained by epitaxial
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growth of i and n layers of GaAs with a Cr additive on a p-type GaAs substrate. The kinetics of the change in the barrier capacitance of the structures under the action of mixed lighting in the photon energy region of 0.55-1.3 eV is also investigated. The authors thank D. N. Nasledov for his interest in the work, and M. B. Kagan and B. A. Kholov for supplying the specimens.

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ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. EXAMINATION OF THE PROBLEM OF THE SYNTHESIS OF THE SELF CONTAINED CONTROL SYSTEM OF A SPACECRAFT ENTERING THE ATMOSPHERE WITH THE FIRST COSMIC SPEED. DIGITAL CALCULATIONS MADE BY MEANS OF AN ELECTRONIC COMPUTER SHOW THAT THIS SELF CONTAINED CONTROL SYSTEM MAKES IT POSSIBLE TO DECREASE THE DISPERSION COMPONENT OF LANDING SPOTS SIGNIFICANTLY. A HISTOGRAM OF THE LANDING SPOTS IN THE CASE OF CONTROLLABLE AND CONTROLLESS MOTION IS SHOWN. FACILITY:
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"Utilization of Lemon Seed and Dibazol Extracts as Nonspecific Prophylactic Means Against Acute Respiratory Diseases During the Influenza Epidemic at the Beginning of 1969"

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Abstract: For lack of specific drugs, lemon seed and dibazol extracts diluted with boiled water were given daily to children in Secondary School No 4 in Chirchinka, Tashkentskaya Oblast. The control group (231 children) received nothing; the second group (328 children) received the lemon seed extract; and the third group (141 children) received the dibazol extract for one month (24 Jun to 24 Feb). The number of children becoming ill with acute respiratory diseases during that period was 1.5 times smaller in the second group and two times smaller in the third group than in the control group. Since the diseases also became less severe, the average duration of illness in the test groups was 4.5 days, while it was 5.5 days in the control group; school absenteeism diminished correspondingly. The increased resistance among test group children lasted beyond the period of treatment, since morbidity and

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